DOCUMENT RESUME

ED 109 168 TM 004 615

AUTHOR	Sharon, Amiel T.
TITLE	The Non-High-School-Graduate Adult in College and His Success as Predicted by the Tests of General Educational Development.
INSTITUTION	Educational Testing Service, Princeton, N.J.
SPONS AGENCY	American Council on Education, Washington, D. C. Commission on Accreditation of Service Experiences.
PUB DATE	72
NOTE	17p.
EDRS PRICE	MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS	Achievement Tests; *Adult Students; *College Admission; College Entrance Examinations; Dropouts; *Equivalency Tests; Higher Education; *Predictive Ability (Testing); Predictive Validity; *Test Validity
IDENTIFIERS	*General Educational Development Tests

ABSTRACT

The primary use of the Tests of General Educational Development (GED) is to appraise the educational development of adults who have not completed their formal high school education. The significance of these tests for higher education lies in their extensive use in admission of non-high-school-graduate adults to college. This study has three major objectives: (1) To describe the background and experience of non-high-school-graduates who enroll in college on the basis of their GED scores; (2) To determine the validity of the GED battery for predicting the success of non-high-school graduates at a variety of institutions of higher education; and (3) to identify the advantages and problems created by granting admission to college by means of the GED tests. Results suggest that the GED tests are useful for the admission and guidance of college candidates who have not completed high school. If the academic achievement of a candidate as reflected by his GED test score is equivalent to that of formal high school graduates, he should be given serious consideration for admission to higher education. High school dropouts who score satisfactorily on the GED examinations are likely to earn college grades comparable to those earned by high school graduates who enroll in college. (Author/RC)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED109168

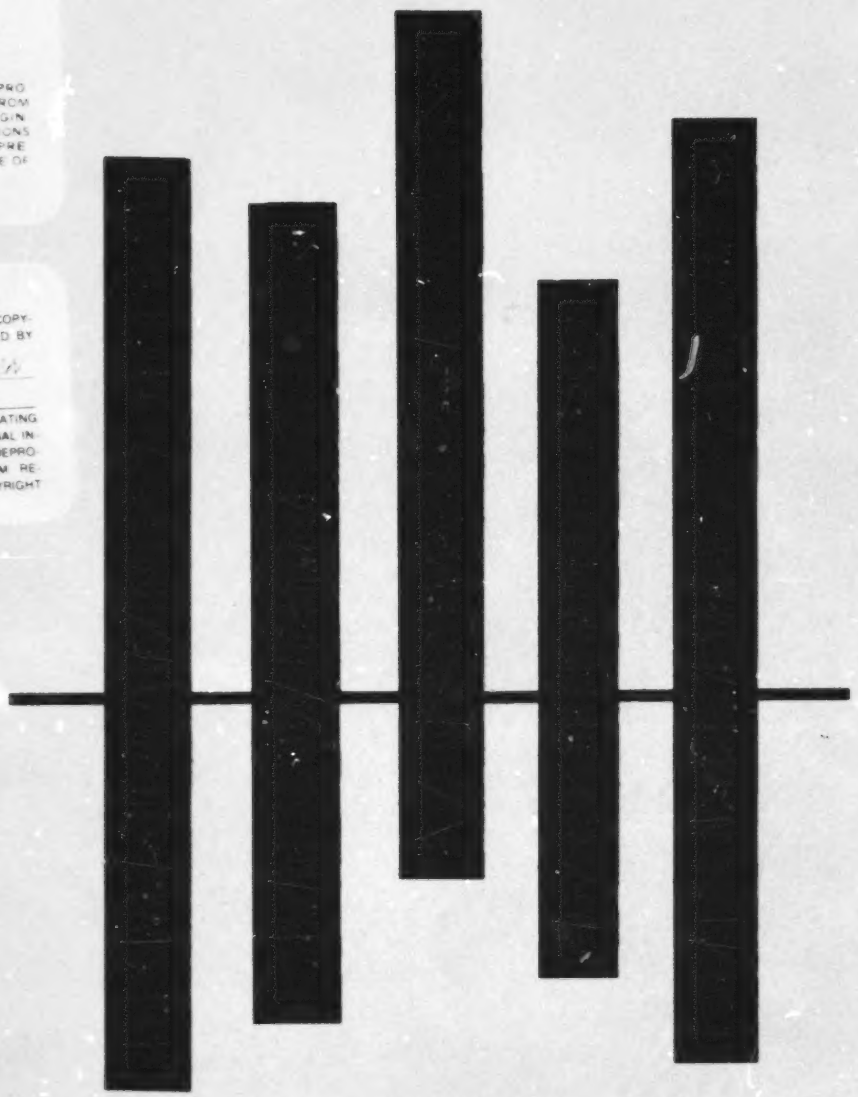
THE NON-HIGH-SCHOOL-GRADUATE ADULT IN COLLEGE AND HIS SUCCESS AS PREDICTED BY THE TESTS OF GENERAL EDUCATIONAL DEVELOPMENT

by

AMIEL T. SHARON

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY
DOROTHY GREEN
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER



TM 004 615

EDUCATIONAL TESTING SERVICE, PRINCETON, NEW JERSEY

This study was performed under contract with the Commission on Accreditation of Service Experiences of the American Council on Education.

Educational Testing Service is an Equal Opportunity Employer.

Copyright © 1972 by Educational Testing Service. All rights reserved.

CONTENTS

BACKGROUND 1
The GED Tests 1
Previous Studies of the GED 2
The Objectives of This Study 2

METHOD 3
The Institutional Sample 3
The Student Sample 3

A PROFILE OF THE RESPONDENTS 4
The Students' Status at College 4
Sex and Age 4
Race and Religion 5
Geographic Distribution 5
Attitudes and Preferences 5
Educational Background 5
Factors Influencing Their Decision to Go to College 6
Educational and Career Plans 6
Learning about the GED 6
Why They Took the GED 6
Receiving Test Results 6
Admission Requirements 6

GED TEST PERFORMANCE AND SUCCESS IN COLLEGE 7
How Respondents Scored on the GED . . . 7
Grades in College 8
The Relationship of GED Scores to Grades in College 8
By Type of Institution 9
By Sex 9
By Age 9
How GED Tests Correlate with Each Other and with Other Predictors 9
With High School Grades 10
With the Scholastic Aptitude Test 10
Who Dropped Out 11

EFFECTS OF THE GED 11

SUMMARY AND CONCLUSIONS 11
Recommendations for Improving the GED Program 12

REFERENCES 12

APPENDIX 13
Participating Four-year Institutions 13
Participating Two-year Institutions 13

TABLES

1. Characteristics of the Institutional Sample . 3
2. Means and Standard Deviations of GED Scores and Grade-point Averages for Questionnaire Respondents and Non-respondents 4
3. GED Test Performance of All Students . . 7
4. Correlation of GED Tests with GPA for Total Sample 8
5. Correlation of GED Tests with GPA by Type of Institution 9
6. Validities of GED Tests by Sex 9
7. Validities of GED Tests for Two Age Groups 9
8. Intercorrelations of the GED Tests 10
9. Percentages of Traditional and GED Students with Indicated High School Grade Averages 10
10. The Relationship of GED Scores to Self-reported Grades in Secondary School 10
11. Correlations of the GED Tests with the Scholastic Aptitude Test 10

BACKGROUND

The high school-level batteries of the Tests of General Educational Development (GED) were introduced in 1942 by the Examination Staff of the United States Armed Forces Institute (USAFI) to help World War II veterans who had not graduated from high school to adjust to civilian life and resume their educational and vocational plans. The Examination Staff consisted of civilian testing experts working under the direction of the Advisory Committee to USAFI, a committee made up primarily of civilian educators. The committee was established by, and with support from, the American Council on Education, the National Association of Secondary School Principals, and the regional accrediting associations.

In August 1945, the American Council on Education established the Veterans' Testing Service (VTS) as a facility to make the GED tests available to civilian educational institutions for administration to veterans. In December of the same year, the Council also established the Commission on Accreditation of Service Experiences (CASE) to assist colleges and universities, state departments of education, and high schools by evaluating service school courses and making recommendations for the granting of credit for the formal educational experiences of military personnel. In January 1946, the Council assigned to the Commission the responsibility for the policy direction, operation, and supervision of the VTS.

The use of the GED tests by veterans wishing to earn a high school equivalency certificate for vocational purposes or to qualify for admission to further educational opportunities proved so highly successful that state departments of education and colleges in 1947 began extending the use of the tests to all adult citizens. By 1959, the number of nonveteran adults tested exceeded the number of veterans. In recognition of the change, the Commission on Accreditation at its May 1963 meeting officially changed the name of the Veterans' Testing Service to the General Educational Development (GED) Testing Service.

The GED testing program, which uses civilian restricted forms of the tests, has become worldwide in scope. The tests are now administered by 61 departments of education, those in the 50 states, the District of Columbia, American Samoa, the Canal Zone, Guam, Puerto Rico, the Trust Territory of the Pacific Islands, and five Provinces of Canada—Manitoba, New Brunswick, Nova Scotia, Prince Edward Island, and Saskatchewan. Of these 61 departments, 60 have policies for issuance of high school equivalency certificates to adults who meet their minimum score, minimum age, and minimum residence requirements. In addition, the military restricted forms of the GED tests are administered through the United States Armed Forces Institute to military personnel stationed both in the United States and elsewhere in the world.

The GED Tests

The GED test battery consists of five tests:

- Test 1: Correctness and Effectiveness of Expression
- Test 2: Interpretation of Reading Materials in the Social Studies
- Test 3: Interpretation of Reading Materials in the Natural Sciences
- Test 4: Interpretation of Literary Materials
- Test 5: General Mathematical Ability

Here, the five tests will be called English, Social Studies, Natural Sciences, Literature, and Mathematics.

The primary use of the tests is to appraise the educational development of adults who have not completed their formal high school education. Therefore, the tests have been constructed somewhat differently from the usual school achievement tests, which are designed to measure immediate objectives of instruction. It is recognized that an individual can make considerable educational progress through a variety of educative experiences, both in school and in other situations. The educational progress of persons not in school is likely to be the result of first-hand observation, direct experience, self-directed reading and study, conversations and informal group discussions, and other experiences with problems, ideas, and people. In contrast is the educational development of students in the classroom who learn largely by vicarious experiences through the use of textbooks and formal pedagogical procedures presented in a sequential arrangement. In the classroom there is likely to be a more complete and detailed coverage of specific facts and ideas than is often encountered in out-of-school learning experiences.

In consideration of these differences, the GED tests have been designed to measure as directly as possible the attainment of the major objectives of the secondary school program of general education. The emphasis in the GED tests is placed on intellectual power rather than detailed content; on the demonstration of competence in using major generalizations, concepts, and ideas; and on the ability to comprehend exactly, evaluate critically, and to think clearly about concepts and ideas.

In measuring the outcomes of formal school instruction, stress must often be placed on detailed, descriptive facts to assure that the student grasps the generalizations and concepts based on those facts. Once the generalizations are firmly established, however, many of the substantiating details will probably be forgotten. In examinations intended for adults with varied experiences, however, the emphasis in the testing should properly be on the major generalizations, ideas, and intellectual skills that are the long-term outcome of a sound education.

While the original purpose of the GED tests was to help veterans who had not completed high school adjust to civilian life, the majority of those tested today are civilian adults. In the calendar year of 1971 (the last year for which data have been compiled), there were 387,733 persons tested at 1,858 official GED centers throughout the United States. In addition, more than 90,000 military persons on active duty were given the military restricted forms of the GED tests through USAFI. The average age of those taking the civilian restricted forms of the GED tests in 1971 was 28 years. The average number of years of formal schooling completed was 9.78. During 1971, 41 percent indicated that they wished to qualify for education or training beyond the high school level. The remainder indicated that they wished to earn a high school equivalency certificate in order to qualify for better jobs or gain promotion in their work. Each state department of education determines the minimum critical scores for the issuance of a certificate. Based on these standards, 31 percent of those tested in 1971 failed.

The equivalency certificates or diplomas issued by the departments of education are official documents that are as acceptable as high school diplomas. Institutions of higher education, business and industry, civil service commissions, apprenticeship training programs, and licensing boards widely accept certificates or diplomas or GED test scores as meeting high school graduation requirements.

The GED tests are administered primarily at official GED centers established by state departments of education. By authorization of the Commission on Accreditation, the tests are administered to veteran patients at VA hospitals and centers. The tests are also administered through the Commission office to inmates and patients in all federal correctional and health institutions and to American civilian citizens overseas and foreign nationals. Special editions of the tests on magnetic tape and large type are available from the Commission for administration to the visually handicapped. The Commission also makes available Spanish versions of the GED tests for administration to Spanish-speaking residents of the country.

The significance of the GED tests for higher education lies in their extensive use in the admission of non-high-school-graduate adults to college. The test scores are used in lieu of a complete high school transcript. The Commission on Accreditation has always recommended that colleges require achievement on the GED tests to be consistent with their policies for accepting high school graduate applicants. If a college accepts all high school graduates, then the Commission's recommendation is that the college also accept those whose GED test scores meet the level required by each state department of education for an equivalency certificate or equivalency diploma. A CASE survey of approximately 2,200 colleges revealed that over 1,600 institutions accept satisfactory GED test scores as evidence of ability to undertake college work. The policies of 1,728 institutions of higher education regarding acceptance of GED test scores have been published by CASE (1970).

Previous Studies of the GED

Most of the previous studies of the GED were conducted in the 1940s and the 1950s. Early research on the battery has generally shown that it is a fairly accurate predictor of college success. Dressel and Schmid (1951) evaluated numerous investigations relating to the validity of the examinations and concluded that a large number of individuals who passed the tests were successful in college work or jobs that ordinarily require a high school education. Tyler's (1954) fact-finding study, which examined data from a large number of different institutions, was partially directed toward determining the validity of the GED as an instrument of admission to higher education. Tyler concluded that substantial numbers of GED matriculants were successful in college and, although in general their scholastic achievement was not quite as high as that of high school graduates, the differences were surprisingly small. A special committee that evaluated the Tyler study made the following recommendation in relation to the use of the GED as an instrument of college admission:

> Further studies are needed to determine whether the weaknesses of students who fail to complete college after being admitted on the basis of GED tests are essentially different from the weaknesses of students who fail to complete college after being admitted on the basis of the formal high school diploma.

The Objectives of This Study

Previous investigations of the GED had a number of limitations that made it difficult to evaluate the tests comprehensively. The studies were invariably conducted within single institutions, thus limiting the number of subjects who could participate in any given study. Furthermore, because of institutional diversity in populations, admission standards, and grading practices, it was difficult to generalize across institutions and to compare the results of these studies. Further, there has been a shift in the GED examinee population since the original validity studies were conducted: More civilians than servicemen are tested with the battery today. In addition to the changes in test-candidate population, there have been marked changes in higher education itself over the years such as increased curriculum flexibility and the growth of junior colleges. Thus, although previous research has supported the use of the GED in the admission of non-high-school graduates to college, there is a need for a continuous reexamination of the validity of the battery and the procedures of the testing program.

This study, therefore, had three major objectives:

1. To describe the background and experience of non-high-school graduates who enroll in a college on the basis of their GED scores

2. To determine the validity of the GED battery for predicting the success of non-high-school graduates at a variety of institutions of higher education

3. To identify the advantages and problems created by granting admission to college by means of the GED tests.

METHOD

The Institutional Sample

The primary sampling unit for the study was the collegiate institution admitting substantial numbers of candidates on the basis of GED scores. Although the institutional population of interest included all institutions of higher education in the United States, for a number of reasons it was not feasible to select a representative sample of this population. The procedure used for choosing the colleges was based on the premise that the study could be conducted only if data could be obtained on a sufficient number of GED students actually enrolled in college. Although the recent CASE survey quoted earlier revealed that most of the nation's institutions of higher education accept satisfactory GED scores as evidence of ability to undertake college-level study, there was reason to believe that most GED candidates were enrolled in a limited number of colleges. Thus, it was necessary to restrict the sampling of institutions to those believed to be admitting significant numbers of GED students, and most of these institutions are under public rather than private control.

A total of 111 such colleges and universities were invited to participate during the period of September 1969 to November 1970. Of this total, 40 institutions cooperated in the study and supplied the data requested. These institutions—including 12 junior colleges and 28 four-year or senior colleges (see appendix)—were not necessarily expected to be a representative cross-section of the nation's colleges and universities. (The extent to which they varied in their relevant characteristics is indicated in Table 1.) In fact, the sample appears to be most unrepresentative of U.S. institutions of higher education in type of control, with only 10 percent of the colleges under private control. Since private colleges may not be providing educational programs under schedules and circumstances that meet the needs and interests of GED candidates who tend to be older and frequently have family and job responsibilities, the small number of such institutions in the study is not surprising. Moreover, the generally higher tuition of these institutions may be a barrier to GED candidates.

Table 1

Characteristics of the Institutional Sample

Variable	*Number of Colleges*	*Percent*
Control		
Public	36	90
Private	4	10
Location		
Urban[a]	21	52.5
Nonurban	19	47.5
Region[b]		
East	12	30
Northcentral	12	30
South	9	22.5
West	7	17.5
Selectivity (% accepted)[c]		
0-50%	1	2.5
51-60%	2	5
61-70%	2	5
71-80%	11	27.5
81-90%	5	12.5
91-100%	9	22.5
Unknown	10	25.0
Size		
Fewer than 5,000 students	13	32.5
5,000 students or more	27	67.5
Type		
Junior college	12	30
Senior college	28	70

[a] In a city of 50,000 or larger or in a metropolitan area

[b] U.S. Census regions

[c] Junior college data from: Gleazer, E. J. (ED.), *American Junior Colleges*, 7th edition, American Council on Education, 1967. Senior college data from: Cass, J., and Birnbaum, M., *Comparative Guide to American Colleges for Students, Parents and Counselors*, New York: Harper & Row, 1969.

The Student Sample

The participating institutions were requested to provide the name, address, date of admission, GED test scores, Scholastic Aptitude Test (SAT) scores (if any), and cumulative grade-point average (GPA) for all students admitted with GED test scores generally within the two-year period prior to the date of the request. Data were provided, however, for students who enrolled in college over a period of several years: Three percent of the student sample had enrolled in college prior to 1967, 1 percent in 1967, 3 percent in 1968, 42 percent in 1969, 51 percent in 1967, and 3 percent were unknown. The grade-point averages of students were requested, in most cases, from one to two years after the

admission of the students to the college.

Several colleges did not provide complete information for all their students. In some cases, institutional records indicated that a student had taken the GED, but that his scores were not available. The scores of many, but not all, such students were subsequently obtained from the appropriate state departments of education. GED scores could not be determined for 159 of the 1,367 students who had been identified at the 40 participating institutions, and grade-point averages were not reported by the colleges for most of the 390 students who withdrew from college plus an additional 40 students who remained in college during the period surveyed.

Each student in the sample was mailed a questionnaire requesting various biographic and demographic information, including information on experiences with the GED and attitudes toward a variety of current social issues. Follow-up postcards requesting return of the questionnaires were sent to most of the nonrespondents. Returns were received from 538 students, or 39 percent of the total sample.

The possible effect of the nonrespondent bias on the results can be evaluated by comparing the GED scores with the grade-point averages of respondents and nonrespondents indicated in Table 2. The GED scores are on a scale ranging from 20 to 80 while the grade-point average is on a five-point scale (A = 4 and F = 0). The nonrespondents scored an average of one scale point lower on each of the tests than did the respondents. Although the mean differences are statistically significant at the .05 level for the English and Social Studies tests, they are not large enough in relation to the standard deviation to be of practical significance. The grade-point average difference is also statistically significant but not large enough in relation to the standard deviation to be meaningful.

Visits by the research staff were made to four of the participating colleges for the purpose of interviewing 30 GED students. These in-depth, structured interviews, which took an average of one hour each, consisted of a series of open-ended questions concerning the student's educational background, experiences with the GED program, experiences in college, and future plans.

Attendance at the colleges in which the students were enrolled at the time of completing the questionnaire was six months or less for 44 percent of the students. Twenty-six percent attended from 7 to 12 months, 13 percent from 13 to 18 months, 7 percent from 19 to 24 months, and 6 percent attended two years or longer.

Only 41 percent of those who completed the questionnaire were full-time students. Seven percent attended about three quarters time, 18 percent about one-half time, and 25 percent about one quarter time.

Table 2

Means and Standard Deviations of GED Scores and Grade-point Averages for Questionnaire Respondents and Nonrespondents[a]

Test	Respondents			Nonrespondents		
	N	*Mean*	*SD*	*N*	*Mean*	*SD*
English	497	51.2	7.3	710	49.6	7.2
Social Studies	496	56.1	7.7	710	55.0	7.9
Natural Sciences	497	56.5	7.4	711	55.8	7.1
Literature	494	56.2	7.6	710	55.4	7.7
Mathematics	495	53.5	7.4	710	52.8	7.4
Grade-point Average	417	2.42	.74	506	2.18	.87

[a] Based only on respondents and nonrespondents for whom GED scores and GPA were available.

A PROFILE OF THE RESPONDENTS

The following detailed description is based on personal interviews with 30 students and the responses of 538 students who completed the questionnaire. It is assumed that this subsample is reasonably representative of all participating students, although it consists only of 39 percent of the sample.

Whenever possible, the characteristics of the study sample have been compared with those of traditional college freshmen surveyed by the American Council on Education's Student Information Form during the fall of 1970 (American Council on Education, 1970). This group of freshmen represents the regular high school graduates who enroll in college within a short time after graduating from high school.

The Students' Status at College

The GED students were at various stages of their educational careers at the time they completed the questionnaire. Most were either freshmen (64 percent) or sophomores (20 percent). Five percent were juniors, 3 percent seniors, and 2 percent graduates.

Sex and Age

The sample consisted of twice as many males as females (67 percent males versus 33 percent females). The greater number of males may be related to the fact that 52 percent of the students were veterans compared with 3 percent veterans in the regular college freshman population. (The encouragement by the armed services to take the GED is

likely to make a greater number of males aware of the existence of the tests.)

The median age of the subjects was 28 years, but ages ranged from 18 to 63 years. One out of five subjects was 40 or older. Since the average GED student is about 10 years older than the average regular freshman, age may be an important factor in explaining some of the findings of this study.

Race and Religion

The racial composition of the sample was similar to that of regular college freshmen. Eighty-eight percent were white, 6 percent were black, 1 percent American Indian, and 5 percent unknown. Corresponding percentages in the regular freshman population were 89 percent white, 9 percent black, and 1 percent American Indian.

The religious preference of the subjects was similar to that of the regular freshman population. Thirty-nine percent were Protestants, 25 percent Catholics, 2 percent Jewish, 11 percent of other faiths, and 22 percent without any religious preference. The regular freshman population consisted of 39 percent Protestants, 31 percent Catholics, 4 percent Jewish, 16 percent of other faiths, and 10 percent with no religious preference.

Geographic Distribution

The states of residence of the students were, in general, the states in which the participating colleges were located. Twenty-four percent of the students were from Indiana, 16 percent from New Jersey, 9 percent from Missouri, 6 percent from Massachusetts, and 5 percent from North Carolina. Each of the other states accounted for less than 5 percent of the student sample.

Attitudes and Preferences

The GED students appeared to be more conservative in their attitudes compared with the traditional students—at least as indicated by their agreement or disagreement with certain controversial issues. Forty-four percent of the traditional students agreed with the statement "Students from disadvantaged social backgrounds should be given preferential treatment in college admissions" compared with agreement by only 30 percent of the GED students. On the other hand, more GED students agreed with the statement "Most college officials have been too lax in dealing with student protests on campus" (73 percent GED vs. 58 percent traditional) and with the statement "College officials have the right to regulate student behavior off-campus" (23 percent GED vs. 17 percent traditional).

Although the preferences of traditional and GED students are in many respects similar, there are some noteworthy differences. More traditional students than GED students think it is important or essential to become an authority on a special subject in their field (67 percent traditional vs. 55 percent GED), to be successful in a business of their own (44 percent traditional vs. 33 percent GED), or to participate in an organization like the Peace Corps or Vista (20 percent traditional vs. 8 percent GED). On the other hand, more GED students think it is important for them to have administrative responsibility for the work of others (32 percent GED vs. 22 percent traditional). Most of the differences can probably be accounted for by the difference in the average age of the two groups rather than by the unique attitudes and preferences of those who take the GED tests.

Educational Background

The most common aspect of the students' educational experience is that they withdrew from formal schooling prior to graduating from secondary school. Withdrawal from formal education occurred at different grade levels. Eighty-eight percent had one or more years of high school education, while only 8 percent never attended high school. Of those who did attend high school, 16 percent completed ninth grade, 28 percent tenth grade, 29 percent eleventh grade, and 14 percent twelfth grade.[1] Although almost all subjects were school dropouts, their formal educational background was quite varied.

Many different responses were given to the question "Why did you drop out of school?" The most frequent reason given was financial difficulties, including the need to obtain a job, earn money, make a living, and help support one's family. It should be noted that many of the older subjects were adolescents in the postdepression era when withdrawal from formal schooling for financial reasons was not uncommon. Other reasons given for leaving school, in order of frequency mentioned, were boredom and disinterest, domestic problems, joining the armed forces, frustration by school system, lack of motivation, immaturity, emotional problems, and lack of enough credits to graduate.

For many of the subjects there was a long period of time between leaving school and enrolling in a college. For 40 percent of the subjects this period of time was 10 years or more. Only 14 percent entered college within one year or less after withdrawing from formal schooling.

Although most of the subjects' formal education was interrupted for a relatively long period of time, many have continued their education informally. Almost half of the subjects continued learning by some form of independent study. Other frequent forms of nontraditional education were on-the-job training and correspondence instruction.

---

[1]Some of the subjects completed twelfth grade but did not receive a high school diploma. This can occur when the high school senior lacks a course, does not make up a failed course, or fails to meet certain requirements such as passing comprehensive examinations. One participating university system admitted a limited number of high school graduates whose high school grades were lower than those normally required for admission but whose GED scores indicated promise.

The disciplines most commonly studied were technical and job-related and somewhat less academic. Recreational and religious courses were each taken by fewer than 5 percent of the students.

Factors Influencing Their Decision to Go to College

The decision to go to college is for many individuals a highly complex one, usually influenced by several factors. The GED program apparently played a major role in influencing some individuals to apply to college. Most of the students, however, had decided to go to college before taking the tests.

Significant differences were found between the GED students and high school graduates in factors influencing the decision to enroll in college. Parents or other relatives were a major influence on approximately one-half of the traditional students but only on a fourth of the GED students. Academic reputation was a major influence on more traditional than GED students (43 percent traditional vs. 29 percent GED), but low cost influenced slightly more GED students (28 percent GED vs. 25 percent traditional). Other factors influencing the decision to enroll in college, such as encouragement by a guidance counselor and friends enrolled at college, were a major influence only on a relatively small proportion of GED students. Thus their decision to enroll in college was affected by several factors, one of which was successful performance on the GED tests.

Educational and Career Plans

In planning for formal education, the GED students set their sights only slightly lower than did traditional students. In response to the question "What is the highest academic degree that you intend to obtain?" 38 percent of the traditional vs. 32 percent of the GED students indicated that they planned to obtain the bachelor's degree. For the master's degree, the corresponding percentages were 31 and 27, and for the doctorate, 10 and 8.

The GED students tended to major in business, social sciences, and health disciplines to a greater degree than the traditional students. Twenty-eight percent of the GED students indicated that they were or will be majoring in business compared with 16 percent of the traditional students. In social sciences, there were 19 percent GED majors vs. 15 percent traditional students; in health professions (excluding M.D.) there were 12 percent GED majors vs. 7 percent traditional majors.

The most frequently chosen career by GED students was business followed by elementary or secondary school teaching and nursing. Business and teaching were also the two careers most frequently chosen by traditional students.

Learning about the GED

Although the GED program is well-known to educators, it is relatively unknown to the general public, especially to those who may be helped most by taking the examinations. Relatively few of the subjects in this study indicated that they became aware of the GED through the mass media. Only 1 percent learned about the tests by radio or television, 2 percent by a poster in a public place, 6 percent by a college catalog, and 7 percent by newspaper or magazine. On the other hand, 39 percent learned about the tests in the armed services, 22 percent through a friend or relative, and 20 percent in some other manner. Since the armed services do such a good job of informing servicemen of the GED, it is not surprising that 52 percent of the subjects in this study were veterans.

Why They Took the GED

Although a non-high-school graduate may be aware of the GED program, he may not necessarily ever take the tests. The experience of dropping out of high school may have shaken his confidence and without encouragement it may be difficult for such a person to obtain the high school equivalency certificate.

A tentative answer to why the students in this sample took the GED tests was provided by the 30 subjects who were interviewed. Half of these students stated that they took the tests specifically in order to be able to go to college. Others took the tests because they were urged to take them by parents or relatives or because they originally wanted a high school equivalency certificate for vocational or social reasons.

Receiving Test Results

The reporting of scores to GED examinees is one of the obligations of the agency administering the tests. Furthermore, according to the GED *Examiner's Manual*, "when test results are sent to an examinee, they should be accompanied by a letter that indicates the degree of success achieved on the tests." It is apparent, however, that not all students are receiving their scores, and many are not receiving interpretive information. One out of 10 students indicated that they never knew the scores they obtained on the test, while 3 out of 10 stated that they did not receive interpretive information with their scores. Of those who were able to evaluate their scores, most performed better than expected.

In the absence of interpretive information, some students devised their own methods of evaluating their relative performance. One candidate, for example, compared her scores with those of several of her classmates who were enrolled with her in a special GED refresher course. Unfortunately, such informal methods of comparison can be frequently misleading because the comparison scores could be quite atypical.

Admission Requirements

It may be hypothesized that if the GED candidate applying for admission to college is viewed, because of his with-

drawal from high school, as a high risk, then various hurdles and barriers may be placed before him by the college. Among other things, the present study sought to determine the extent to which college admission requirements differ for nontraditional students and regular high school graduates.

All but five students participating in this study had scores at or above the level recommended by CASE for a high school equivalency certificate[2]. This does not mean that all those scoring above the recommended level actually obtained a certificate. Seventeen percent of the students stated that they had not obtained an equivalency certificate.

Most students were required to present the equivalency certificate for admission to college. Sixty-nine percent indicated that the certificate was one of the admission requirements, 13 percent indicated it was not required, and 17 percent did not know.

Some candidates were required to present scores of tests other than the GED. Twenty-six percent of the candidates were required to take the battery of the American College Testing Program (ACT); 21 percent were required to take the Scholastic Aptitude Test as were regular high school graduate applicants for admission. Nevertheless, the GED or the equivalency certificate appeared to be the major criterion for the admission of the students in the sample.

CASE recommends to colleges that "critical scores on the tests be set at a point which is comparable to the academic selective requirements for admission of high school graduates" (CASE, 1971). Although data gathered in this study do not directly indicate whether CASE's recommendations are being followed, there is no evidence that the critical scores were set at an inordinately high level by any participating college. In fact, it was found that some colleges do not require the actual scores at all but only evidence of attainment of the equivalency certificate.

The policies of the colleges on the GED are apparently clear to most nontraditional students seeking admission. More than half of the subjects indicated that they understood their college's policy when they were seeking admission. Information on the policies was most frequently obtained from the college catalog, a relative, or the admissions office. Of the 30 subjects interviewed, 28 indicated that they were admitted to college as though they had had a regular high school diploma. Only two students were admitted with restrictions: One was placed on academic probation, and the other was required to take a remedial course.

GED TEST PERFORMANCE AND SUCCESS IN COLLEGE

How Respondents Scored on the GED

Of the 1,367 individuals who participated in this study and who enrolled in a college with GED scores, there were 1,208 for whom scores on one or more of the five examinations were available. Table 3 presents the mean, standard deviation, and number of cases for each of the tests. A general notion of the achievement level of the student sample can be gained by comparing their scores on the GED with those earned by the national norming sample, which consists of graduating high school seniors who were tested with the GED in 1967. The norming sample has a mean of 50 and a standard deviation of 10 on each of the five examinations. The study sample performed significantly higher than the normative sample on all tests except English[3]. In interpreting these results, one needs to consider that the student sample consisted of GED candidates who had enrolled in a college through a process of self- and institutional selection. That is, candidates with low scores were less likely to apply to, or be selected by, a college. Thus, those students who enroll in college would be expected to have higher academic achievement than typical high school seniors or all GED examinees. They would also be expected to be a more homogeneous group than an unselected group of candidates. This expectation is confirmed by the relatively small standard deviations (SDs) shown in Table 3.

Table 3

GED Test Performance of All Students

Test	*N*	*Mean*	*SD*
English	1,207	50.3	7.3
Social Studies	1,206	55.4	7.9
Natural Sciences	1,208	56.1	7.2
Literature	1,204	55.7	7.7
Mathematics	1.205	53.1	7.4

[2]CASE recommends a minimum score of 35 on each examination or an average of 45 on all five.

[3]It should be noted that comparisons of different GED scores can be legitimately made even though the scores were obtained on different test forms. Through a procedure known as "equating," the same scores on different forms of the GED are made essentially equivalent. Thus, while all the students in the study sample did not take the same form of the GED or the same form that was taken by the normative sample, the scores can be summarized as though everyone had, in fact, been examined with the same form.

The average scores of the students on the five GED examinations were somewhat uneven compared with those in the norming sample. Achievement was highest in Social Studies, Natural Sciences, and Literature, somewhat lower in Mathematics, and lowest in English. This pattern of performance is consistent with at least one previous analysis of adult educational achievement (College Entrance Examination Board, 1968). The average scores of a large group of military personnel on the CLEP General Examinations (which cover the same subjects as the GED tests) was the highest in natural sciences and the lowest in English compared with a college sophomore norming sample. The older servicemen performed best in social sciences and history and poorest in English and mathematics. Since the median age of the subjects in the present study was 28, the consistency of results of the two studies may be explained by the age factor. It may be hypothesized that the relative amount of knowledge in informal academic disciplines, such as social sciences, history, and natural sciences, improves with age while there is a general decline in the more formal discipline of mathematics. Informal disciplines may be easily learned by reading books, magazines, or newspapers or by engaging in a variety of other nontraditional forms of education. Formal subjects such as mathematics, however, are difficult to learn on one's own. Furthermore, forgetting is likely to take place unless one uses the subject on a regular basis.

Other factors may explain the poorer performance in English. Although English may not be thought of as a highly formal subject, the formal aspects of the language, such as grammatical rules, tend to be emphasized on tests of academic achievement such as the GED. The poorer performance of the nontraditional student on English may be because the formal aspects of English are not readily learned through the typical out-of-school educational experiences.

Grades in College

Academic achievement in college has been most often measured by course grades or the grade-point average, which is the weighted average of grades in all previous courses taken. College administrators view the GPA as a relevant index of success and they frequently use it to determine whether a student should remain in college, take advanced courses, or receive special honors. Second, the GPA is readily available in the files of many colleges, so that little effort and expense are needed to obtain it. Finally, no other single index of college success which is clearly more relevant or acceptable than the GPA has yet been developed.

The GPA, however, has a number of shortcomings that should be mentioned. It is not a very stable index but rather tends to change from semester to semester. Furthermore, the GPA is only a measure of academic achievement; therefore, it fails to reflect nonacademic accomplishments and certain desirable student attributes, such as ethicality, open-mindedness, and self-insight (Davis, 1964). Finally, grades may lack variability (as, for example, when a professor gives his students all A's or B's) and, therefore, could not be easily related to predictor variables.

One way the grades of the GED students were evaluated was by comparing them with the grades of regular high school graduates attending the same colleges. Although such a comparison may seem logical and simple, a number of methodological problems arose in doing so. Originally, the participating institutions were asked to select a sample of their traditional students who would be comparable in number and composition to their GED students. Since this procedure resulted in inadequate samples of traditional students, the colleges were requested to provide the average GPA of all of their students currently enrolled. Each GED student's GPA was thus compared with the mean GPA at the college he was attending. The results of the comparison indicated that 55 percent of the GED students had a lower average than that of all students at their college, while 45 percent had grades equal to or higher than those of the traditional students. This comparison tends to place the GED students at a disadvantage, because the mean GPA of all traditional students is based on a larger proportion of upper-level students than is the GED sample. (Upper-level students are likely to have higher GPA's than lower-level students because of attrition of academically poor students.) The foregoing comparison seems to corroborate Tyler's (1954) results that led him to conclude that the academic achievement of GED students is only slightly but insignificantly lower than that of regular high school graduates.

The Relationship of GED Scores to Grades in College

The GPA criterion employed in this study was for some students based on the grades received in all courses taken in a single semester; for others, it was based on grades received over as many as five semesters. Furthermore, the number of courses taken by the students within a given semester varied widely because of the large number of part-time students in the sample. Thus, the GPA might be a more reliable index of achievement for some of the students than for others.

Table 4

Correlation of GED Tests with GPA for Total Sample (N = 805)

Test	*r*	*p*
English	.31	.01
Social Studies	.35	.01
Natural Sciences	.32	.01
Literature	.36	.01
Mathematics	.31	.01

The average validities (i.e., correlations with GPA) of each of the five GED tests for all candidates for whom test scores and GPA's were available are indicated in Table 4. The validity coefficients are all in the .30s and are all significant at the .01 level. Correlations of this magnitude generally indicate that the test can be appropriately used for prediction of college success. The GED test validities compare favorably with those of the SAT-verbal and mathematical sections which, on the average, correlate .39 and .33 respectively with first-year grades (Schrader, 1971).

By Type of Institution: GED validity coefficients computed separately for students enrolled in two-and four-year institutions are indicated in Table 5. In the case of every test, the validity is higher for junior than for senior colleges. The pattern of validities is also different at the two types of institutions. Social Studies is the best predictor in the two-year colleges; Literature is the most predictive of success in the four-year colleges. Because the two-year institution validities are higher than those obtained for the total sample, type of institution can be considered a moderator of the relationship between the GED and GPA. That is, when making predictions of the likely success of the GED student, the type of institution he is attending should be taken into account in the prediction equation.

Table 5
Correlation of GED Tests with GPA by Type of Institution

	Two-year (N = 211)		*Four-year (N = 594)*	
Test	*r*	*p*	*r*	*p*
English	.33	.01	.30	.01
Social Studies	.51	.01	.25	.01
Natural Sciences	.43	.01	.25	.01
Literature	.40	.01	.34	.01
Mathematics	.39	.01	.27	.01

By Sex: Subgrouping the GED students by sex has also been done for the purpose of raising the predictive validity of the tests. Table 6 presents the validity coefficients computed separately for males and females, which show that sex is a moderator in the prediction of GPA. It can be seen that the validities are higher for the females for every test. This result is consistent with findings of several previous studies, which showed that female success in college is more predictable than that of males (Seashore, 1962). A possible explanation is that female motivation for academic study is more homogeneous than that of males, thus minimizing the error of prediction from ability. A male, on the other hand, may not perform in college at a level consistent with his ability because of low motivation.

Table 6
Validities of GED Tests by Sex

	Male			*Female*		
Test	*N*	*r*	*p*	*N*	*r*	*p*
English	239	.46	.01	125	.48	.01
Social Studies	239	.35	.01	124	.45	.01
Natural Sciences	239	.41	.01	125	.44	.01
Literature	239	.45	.01	124	.55	.01
Mathematics	238	.41	.01	125	.42	.01

By Age: Since maturity and motivation may play a more important role in the college achievement of the older candidate, it was hypothesized that subgrouping on the basis of age may raise the predictive accuracy of the GED tests. Table 7 indicates that age is an effective moderator in the prediction of GPA. The validity coefficients for both age groups are all higher than the corresponding coefficients for the total sample as shown in Table 4. A comparison of the validities of the GED tests of those under age 30 and those age 30 and over indicates that there is little difference in the predictability of these two age groups. This result was unexpected since it was assumed that the tests would be less valid for the older than for the younger candidates. Since motivation is assumed to carry greater weight in the college performance of adults, ability or previous achievement as measured by the GED tests was not thought to be an accurate predictor of success. These findings are encouraging for the use of the GED tests with older candidates.

Table 7
Validities of GED Tests for Two Age Groups

	Under Age 30			*Age 30 and Over*		
Test	*N*	*r*	*p*	*N*	*r*	*p*
English	190	.48	.01	153	.51	.01
Social Studies	190	.36	.01	152	.42	.01
Natural Sciences	190	.35	.01	151	.42	.01
Literature	190	.49	.01	153	.43	.01
Mathematics	190	.48	.01	151	.52	.01

How GED Tests Correlate with Each Other and with Other Predictors

The usefulness of separate scores from a set of tests decreases as the correlation between the scores increases. Thus, the correlation between the tests in a battery such as the GED should not be very high.

The intercorrelations of the GED tests are presented in Table 8. They range from a low of .34 between English and Mathematics to a high of .64 between Literature and Social Studies. These correlations suggest that the tests are, to a

Table 8
Intercorrelations of the GED Tests
(N = 1,203)

Tests	English	Social Studies	Natural Sciences	Literature
Social Studies	.53			
Natural Sciences	.46	.62		
Literature	.61	.64	.62	
Mathematics	.34	.45	.57	.45

large extent, measuring unique factors. The correlations are much lower than would be expected of highly reliable tests[4] measuring the same skills or abilities. It might be noted that these intercorrelations are also lower than that between the SAT-verbal and mathematical tests, which correlate .67 with each other (Donlon & Angoff, 1971). Thus, the reporting of five separate scores appears to be justified.

With High School Grades: Previous research has shown that secondary school grades are positively related to achievement test scores for groups of high school graduates. Students who obtain good marks in their courses tend to obtain high test scores and vice versa. Thus, an attempt was made to determine whether high school grades correlate positively with the GED test scores of nontraditional students. Since most of the students participating in the study had completed at least two years of high school, they had received grades in a relatively large number of courses.

The high school grade average of the GED students was obtained via the questionnaire completed by the students[5]. Table 9 indicates the percentage of students reporting various grade averages. Expectedly, the GED students have average grades considerably lower than those of the traditional students.

Table 9
Percentages of Traditional and GED Students with Indicated High School Grade Averages

Grade Average	Traditional	GED
A+, A, A−	14%	8%
B+, B, B−	58	37
C+, C, C−	27	45
D	1	10

[4]The reliability of all recent forms of the GED is .9 or higher (General Educational Development Testing Service, 1971).

[5]Previous research indicates that self-reported grades are accurate indicators of actual grades (Nichols & Holland, 1963).

The relationship between GED scores and high school grades is indicated in Table 10. There is a significant negative correlation between the self-reported grades and the English, Social Studies, and Literature tests. This finding, which is somewhat surprising, might be explained by the informal educational experiences that intervened in the time between leaving high school and taking the GED tests. Such experiences might have modified positive relationships that would have occurred had the tests been taken by the candidates immediately after leaving high school. Another possibility is that many of the students who were not motivated to do well in high school had nevertheless acquired the equivalent of a good high school education on their own.

Table 10
The Relationship of GED Scores to Self-reported Grades in Secondary School

Test	N	r	p
English	483	−.19	.01
Social Studies	482	−.13	.01
Natural Sciences	483	−.06	NS
Literature	480	−.12	.01
Mathematics	481	−.04	NS

With the Scholastic Aptitude Test: Since the SAT is one of the most widely used college entrance examinations in the nation, it is desirable to know how the GED relates to this test. Table 11 presents the correlations between the GED tests and the SAT for a group of candidates for whom all scores were available. Although all correlations are significantly positive, they are only of moderate magnitude. Since both the GED and the SAT are highly reliable tests, the correlations suggest that to a large degree they do not measure the same factors.

As would be expected, the GED mathematical test correlates highest with SAT-mathematical. It is somewhat

Table 11
Correlations of the GED Tests with the Scholastic Aptitude Test (N = 77)

Test	SAT-V	SAT-M
English	.44	.30
Social Studies	.51	.46
Natural Sciences	.44	.46
Literature	.56	.35
Mathematics	.42	.54

surprising that the SAT-verbal correlates higher with the GED Social Studies and Literature tests than with the GED English test. It is possible that the reading comprehension factor, which weighs heavily on SAT-verbal, does not play such an important role on the GED English test.

Who Dropped Out

Completion or noncompletion of a course of studies in college as represented by the attainment of a degree is an important criterion of college success that must be considered in any attempt to validate instruments of admission to college. Since the time involved in gathering this type of criterion data is relatively long, most predictive validity studies have attempted to assess whether students remained in college for a specified period of time such as one or two years.

While it is fairly easy to identify those who remain in a college, it is not so easy to identify those who drop out. Students may be inappropriately classified as dropouts when they transfer or when they temporarily withdraw from school.

Of the 1,367 students who participated in the study, 390 (or 28 percent) withdrew from college during the period of the survey at each college (which ranged from 6 months to 2-1/2 years). This fact, however, should be interpreted with caution. The withdrawals were reported by the colleges rather than by the students, and there is evidence that some students transferred to other colleges, while others returned to college after being away for a semester or more. It should also be remembered that many of the GED students were attending college on a part-time basis and were considerably older than the traditional students. Older students are more likely to have family responsibilities that may limit their ability to pay for college expenses. Twenty-one percent of the GED students, as compared with only 11 percent of the traditional students, indicated that finances were a major concern to them and were not sure that they would be able to complete college. Of the 30 students who were interviewed, 10 indicated that they dropped out of college for one or more semesters. Three of these students have since returned, while four were planning to return in the future.

The most frequent reason for leaving college was the need to earn more money for tuition. Other reasons for withdrawal were family problems or poor academic performance. All in all, the fact that 72 percent of the GED students remained in college during the period surveyed can be considered a fairly impressive accomplishment for a group that includes many individuals who had previously dropped out of secondary school.

EFFECTS OF THE GED

The effects of the GED on these nontraditional students were far-reaching. The most direct effect was access to formal higher education: All but two of the 30 students interviewed indicated that the tests' most important result was making college enrollment possible. About two out of five of the questionnaire respondents indicated that they selected the college in which they enrolled because they could be admitted on the basis of the GED tests.

The influence of the GED on the students went beyond admission to college. About one out of six students was influenced by the tests in choosing a major, and about the same number stated that the tests influenced them in choosing a career. Other effects included ability to obtain a job, possibility of earning a higher income, and feelings of self-confidence and accomplishment.

The overall reaction of the subjects towards the GED program was extremely favorable. The following quotes might summarize the general feelings of the students better than any statistical summary:

"I am teaching a grade in high school that I, myself, never attained."

"Please keep GED going and advertise! A lot of people's lives are messed up from one mistake. GED makes it *so* much easier to go back to school."

"The GED was a dream come true. I doubt if I would have given serious thought to attending high school for even the one year required to earn sufficient credit for a diploma. The opportunity to receive a diploma this way has definitely been the ticket to success for many others also."

SUMMARY AND CONCLUSIONS

This investigation of the GED tests had three major objectives:

1. To determine the background and experience of non-high-school graduates who enroll in college on the basis of their GED test scores
2. To determine the validity of the GED battery for predicting the success of non-high-school graduates at a variety of institutions of higher education
3. To identify the advantages and problems created by granting admission to college by means of the GED tests.

The 40 institutions of higher education that participated in the study represented those colleges accepting significant numbers of non-high-school graduates who scored satisfactorily on the GED tests. The institutions consisted of 12

junior colleges and 28 senior colleges, most of which were under public control and not highly selective.

The subjects of the study were 1,367 students who had taken the GED and been admitted to the cooperating institutions. For each of the subjects, the colleges were asked to supply GED and SAT test scores (if available) and cumulative grade-point averages. A questionnaire on educational background, experiences with the GED, current status at college, attitudes toward a variety of issues, and future plans was mailed to each of the students. The completed questionnaire was returned by 538 students, or 39 percent of the sample. In addition, structured interviews were conducted with 30 nontraditional students on four campuses for the purpose of obtaining a comprehensive profile of the non-high-school graduate in college.

The average subject was a 28-year-old male veteran who learned about the GED program in the armed services. He took the tests in order to be able to enroll in a college. He was admitted to a college with few, if any, restrictions and despite his relatively old age, he had little or no problem in adjusting to college. His attitudes toward certain academic and social issues were more conservative than those of the general college student population. His formal schooling consisted of the completion of tenth grade. His subsequent withdrawal from high school was because of the need to earn money. His nontraditional education consisted primarily of independent study in technical and job-related subjects. He planned to obtain a bachelor's degree and to engage in a business career.

A number of significant results have emerged from the study. The performance of the nontraditional students was significantly higher than that of graduating high school seniors on all GED tests except English. The college grades of the GED students were found to be only slightly lower than those of traditional college students. That 72 percent of the GED students remained in college during the period surveyed can be considered an impressive accomplishment for this group of students.

The magnitude of the validities found for the GED tests in the prediction of grades indicates that the tests are useful and appropriate for the selection and guidance of nontraditional students to higher education. Subgrouping students on the basis of moderator variables, such as sex, age, and type of institution, can raise the predictive accuracy of the tests markedly.

The relatively low intercorrelations of the tests suggest that, to some extent, each test is measuring a unique skill or ability. The reporting of five separate scores is, therefore, justified. The correlations of the GED tests with the SAT, although all positive, also suggest that the two test batteries are not measuring the same factors.

The primary effect of having taken the GED for the nontraditional student sample was the elimination of a barrier to enrollment in formal higher education. The tests also affected some candidates by influencing their choice of college, major field, and career.

The results of this study suggest that the GED tests are useful for the admission and guidance of college candidates who have not formally completed high school. If the academic achievement of a candidate as reflected by his GED test score is equivalent to that of candidates who formally graduated from high school (normative sample), he should be given serious consideration for admission to higher education. High school dropouts who score satisfactorily on the GED examinations are likely to earn college grades comparable to those earned by high school graduates who enroll in college.

Recommendations for Improving the GED Program

Several recommendations for the improvement of the GED testing program have emerged from this study:

1. Colleges should encourage non-high-school graduates to take the GED and to present satisfactory scores as evidence of ability to undertake college-level work.
2. A greater amount of publicity on the GED should be aimed at those segments of the civilian population that are most likely to profit from taking the tests by continuing their education.
3. GED testing agencies should report test scores and interpretive information to all examinees.
4. The issuance of equivalency certificates might be accompanied by summaries of studies such as this one in order to encourage candidates to continue their formal education.

REFERENCES

American Council on Education. *National norms for entering college freshmen—fall 1970.* Washington, D.C.: ACE Research Reports, Vol. 5, No. 6, 1970.

College Entrance Examination Board. *Candidates tested through the United States Armed Forces Institute.* New York: College Entrance Examination Board, 1968.

Commission on Accreditation of Service Experiences. *College accreditation policies for nontraditional education.* Bulletin No. 11. Washington, D.C.: CASE, 1970.

Commission on Accreditation of Service Experiences. *Opportunities for educational and vocational advancement.* Bulletin No. 10. Washington, D.C.: American Council on Education, 1971.

Davis, J. A. Faculty perceptions of students: II: Faculty definition of desirable students' traits. College Entrance Examination Board Research and Development Report 64-3, No. 10. Princeton, N.J.: Educational Testing Service, 1964.

Donlon, T. F., & Angoff, W. H. The Scholastic Aptitude Test. In W. H. Angoff (Ed.), *The College Board Admissions Testing Program*. New York: College Entrance Examination Board, 1971. Pp. 15-48.

Dressel, P. L., & Schmid, J. *An evaluation of the tests of General Educational Development*. Washington: American Council on Education, 1951.

GED Testing Service. *Annual statistical report for calendar year 1970*. Washington, D.C.: American Council on Education, 1971.

GED Testing Service. *Examiner's manual for the tests of General Educational Development*. Washington, D.C.: American Council on Education, 1971.

Nichols, R. C., & Holland, J. L. Prediction of the first-year college performance of high aptitude students. *Psychological Monographs*, 1963, 7 (Whole No. 570), 77.

Schrader, W. B. The predictive validity of College Board Admissions Tests. In W. H. Angoff (Ed.), *The College Board Admissions Testing Program*. New York: College Entrance Examination Board, 1971. Pp. 117-146.

Seashore, H. G. Women are more predictable than men. *Journal of Counseling Psychology*, 1962, *9*, 261-270.

Tyler, R. W. The fact-finding study of the testing program of the United States Armed Forces Institute. Washington, D.C.: Office of Armed Forces Information and Education, Department of Defense, 1954.

APPENDIX

Participating Four-year Institutions

Atlantic Union College (Massachusetts)
Colorado State College
East Tennessee State University
Guilford College (North Carolina)
Idaho State University
Indiana University
- Bloomington Campus
- Fort Wayne Campus
- Gary Campus
- Indianapolis Campus
- Jeffersonville Campus
- Kokomo Campus
- South Bend Campus

Montclair State College (New Jersey)
New Mexico State University
Rhode Island College
Rutgers University (New Jersey)
- Camden Division
- Jersey City Division
- New Brunswick Division
- Newark Division
- Paterson Division

Salem College (West Virginia)
Southern Illinois University—Carbondale
Tri-State College (Indiana)
University of Maine—Farmington
University of Missouri—St. Louis
Weber State College (Utah)
Western Washington State College
West Virginia University

Participating Two-year Institutions

American River College (California)
Bristol Community College (Massachusetts)
Eastern Arizona College
Kirkwood Community College (Iowa)
Lenoir Community College (North Carolina)
Miami-Dade Junior College (Florida)
- North Campus
- South Campus

Mount Wachusett Community College (Massachusetts)
North Iowa Area Community College
Quinsigamond Community College (Massachusetts)
Sandhills Community College (North Carolina)
Surry Community College (North Carolina)